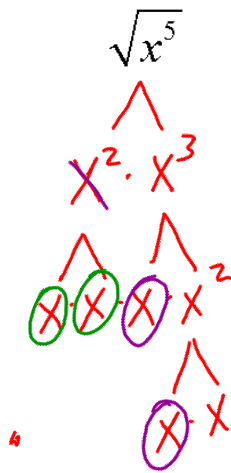


05/20/14     Agenda

- **Any retake or make ups need to be completed by THIS FRIDAY (5/23)!!!!**
- Review Homework
  - Worksheet - Day 1 - Simplifying Radicals
- Chapter 10 - Day 2 - Simplifying Radicals with Variables
- Homework
  - Worksheet - Day 2 - Simplifying Radicals

**SIMPLIFYING RADICALS with VARIABLES:**

"The Buddy System" - The radical is a house and numbers only get to leave the house if they have a buddy!



1) How many "buddies" (groups of 2) can be made? This many groups get to leave the house (exponent on the variable to the left)

2) Is there a variable left over? It is stuck inside the house!

3) Repeat for each different variable.

$$x \cdot x \sqrt{x} = x^2 \sqrt{x}$$

$$\sqrt{x^2} = x \quad \sqrt{x^6} = x^3$$

$$\sqrt{x^4} = x^2 \quad \sqrt{x^{200}} = x^{100}$$

$$x^2 \sqrt{x}$$

SIMPLIFYING RADICALS with VARIABLES:

"The Buddy System" - The radical is a house and numbers only get to leave the house if they have a buddy!

3).

- 1) How many "buddies" (groups of 2) can be made? This many groups get to leave the house (exponent on the variable to the left)
- 2) Is there a variable left over? It is stuck inside the house!
- 3) Repeat for each different variable.

$$\sqrt{x^5 y^7} = \sqrt{\overset{\text{blue}}{\cancel{x}} \overset{\text{blue}}{\cancel{x}} \overset{\text{green}}{\cancel{x}} \overset{\text{green}}{\cancel{x}} \overset{\text{black}}{\cancel{x}} \overset{\text{black}}{\cancel{y}} \overset{\text{black}}{\cancel{y}} \overset{\text{green}}{\cancel{y}} \overset{\text{green}}{\cancel{y}} \overset{\text{blue}}{\cancel{y}} \overset{\text{blue}}{\cancel{y}}}$$

$$\overset{\text{blue}}{x} \cdot \overset{\text{blue}}{x} \cdot \overset{\text{green}}{y} \cdot \overset{\text{green}}{y} \cdot \overset{\text{green}}{y} \sqrt{\overset{\text{red}}{x} \overset{\text{red}}{y}}$$

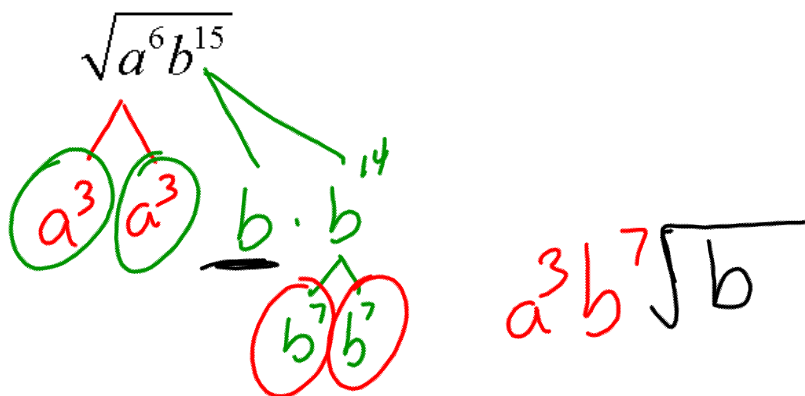
$$\sqrt{x^5 y^7} = x^2 y^3 \sqrt{xy}$$

$$\rightarrow \sqrt{\overset{\text{blue}}{\cancel{x^2}} \overset{\text{blue}}{\cancel{x^2}} \overset{\text{black}}{x} \cdot \overset{\text{red}}{\cancel{y^3}} \overset{\text{red}}{\cancel{y^3}} \overset{\text{black}}{y}}$$

SIMPLIFYING RADICALS with VARIABLES:

"The Buddy System" - The radical is a house and numbers only get to leave the house if they have a buddy!

- 1) How many "buddies" (groups of 2) can be made? This many groups get to leave the house (exponent on the variable to the left)
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$$\sqrt{a^6 b^{15}}$$


$$a^3 b^7 \sqrt{b}$$

$$\sqrt{m^9}$$


$$\sqrt{p^6}$$

$$p^3$$

$$\sqrt{x^5 y^7}$$

$$x^2 y^3 \sqrt{xy}$$

$$m^4 \sqrt{m}$$

SIMPLIFYING RADICALS with VARIABLES:

"The Buddy System" - The radical is a house and numbers only get to leave the house if they have a buddy!

$$\sqrt{441w^4x}$$

- 1) How many "buddies" (groups of 2) can be made? This many groups get to leave the house (exponent on the variable to the left)
- 2) Is there a variable left over? It is stuck inside the house!
- 3) Repeat for each different variable.

$$\sqrt{45x^{11}} = \sqrt{45} \cdot \sqrt{x^{11}}$$

$\begin{array}{cc} \wedge & \wedge \\ 9 \cdot 5 & x \quad x^{10} \\ \wedge & \wedge \\ (3)(3) & (x^5)(x^5) \end{array}$

$3\sqrt{5} \quad x^5\sqrt{x}$

$3x^5\sqrt{5x}$